HST Observations of Mars: Time-Variable Albedo in the Cerberus Region

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HST observations of Mars indicate that the regional albedo feature in Cerberus has changed dramatically since the time of the Viking missions. Cerberus, the prominent dark albedo feature (about 1500 by 500 km in size) forming the southeastern boundary of the bright Elysium region, was observed to be relatively constant in size and appearance between the Mariner 9 and Viking missions (Chaikin et al., 1981) and in early telescopic observations (Slipher, 1962). However, in the HST observations of Feb. 1995 Cerberus has virtually disappeared at visible wavelengths; in fact, it is not evident in any of our HST observations (commencing in late-1990). This indicates that the normally low-albedo surface has been covered with bright dust sometime between the end of the Viking missions (1982) and present. Earth-based observations suggest that Cerberus has been fading since the late-1980's (D. Parker, personal communication, 1995). We are examining ground-based images obtained at a variety of wavelengths to determine when the feature began to fade, and to attempt to trace this albedo variability to any observed dust-storm activity in the region.

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